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Research for People and the Planet

March 10, 2005

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Dear Kamyar Guivetchi and Paul Dabbs,

Enclosed please find our formal comments on the California Water Plan Highlights draft released to the Public Advisory Committee on March 1. As a member of this committee for nearly four years now, I appreciate your efforts in trying to produce a Bulletin 160 for the 21st century.

I am deeply disturbed, however, by sections of this document, as I note in my attached comments. Some of these problems have been previously noted and remain unresolved. There are four major issues of concern:

1. Several numbers and the overall descriptions of the Scenarios are misleading, incorrect, or seriously misrepresent the problems and options facing us. In particular, the recent scenario work is badly and incorrectly described on pages 4-5. I believe this reflects the haste in adding these quantitative scenarios to the summary and the lack of familiarity of DWR staff with the tools and language of scenario analysis. I have made specific suggestions.
2. I had previously asked that a separate Initiative for Water Efficiency be added. This request has, apparently, been turned down, and instead Initiative 2 was renamed to make it appear less biased toward new infrastructure. Unfortunately, the change in name has not been matched by a change in content, and Initiative 2, continues to be biased in the description. If Initiative 2 is really going to be "Statewide Water Management Systems" it must include non-structural options appropriate for statewide implementation, including economics, efficiency, regulations, and education. The current write-up fails to balance these "systems."
3. Several Figures are seriously flawed, especially the scenario summary on page 5 and the options figure on page 15. I list specific suggestions for changes, including the removal of the gratuitously added 2 maf for "groundwater overdraft." This completely distorts all three scenarios.
4. The issue of climate change, which received considerable attention during the process, is largely and inappropriately ignored in this Highlights document. This

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is a major flaw, but easily fixed. I have made two or three simple editorial suggestions to address this.

I hope that these comments will be given serious attention. If not, I fear that the current B160 will go the way of previous B160s: it will be misused, misquoted, or, at the least, simply ignored. This would be a wasted opportunity, and a waste of many peoples time over the past several years.

Sincerely,

Dr. Peter H. Gleick
President
Pacific Institute

Cc:
Lester Snow (attn. Joe Grindstaff) (DWR)
Senator Sheila Kuehl (attn. Dennis O'Conner)
Senator Michael J. Machado (Attn: Dennis O'Conner)
Assemblymember Lois Wolk (Attn: Alf Brandt)
Assemblymember Fran Pavley (Attn: Adrienne Alvord)
Assemblymember John Laird (Attn: Clyde Macdonald)

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Comments of the Pacific Institute on
"California Water Plan Highlights: Public Review Draft March 2005"
Version Released March 1, 2005

By Peter H. Gleick, member Public Advisory Committee (PAC)

Some fundamental flaws remain in the Highlights Document released to the PAC on March 1. I have participated faithfully in the Public Advisory Committee, and have regularly commented in meetings and formally via memo, letter, email, and personal meetings with senior DWR staff. In general, DWR staff has been prompt and responsive to comments and concerns about draft materials.[1] I am disturbed, however, that recently filed written comments on the pending Public Review draft appear to have been either ignored or discounted.

Below, I describe my position on the minimum changes that must be implemented before the final public review draft is released. Some involve changing single words; some involve replacing sentences; some involve eliminating or changing Figures. **I have put recommended wording changes in green.**

There are four fundamental problems:

1. Misuse of numbers and scenarios, including misleading definitions of the scenarios.
2. Inappropriate characterization of Initiative 2: "Statewide water management systems."
3. Misleading or badly described Figures.
4. Inadequate attention to issue of climate change

Misuse of Numbers and Scenarios

The entire writeup of the "future" of California water at the top of pages 4-5 is grossly inaccurate and misleading. It is written like a "prediction" and a single-scenario and

[1] Among the previous Pacific Institute communications with DWR staff are: personal meeting with Joe Grindstaff on February 22, 2005; letter from Peter H. Gleick to Lester Snow, January 31, 2005; email to DWR staff, January 31, 2005; memo to DWR staff on climate change corrections "Problems with Climate Change Sections of Volumes 1 to 4" January 21, 2005; Memo to DWR Staff, October 21, 2003 "Comments on the "Future Scenarios" Section"; Email to DWR staff, December 10, 2004 "Comments on Briefing Materials"; email to DWR staff October 20, 2003 "Comments on climate change section"; Email and memo to DWR staff, September 4, 2003 "Some thoughts of previous B160 flaws not to repeat"; Email and memo to DWR staff, May 13, 2003; "Accounting for Climate Change."

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violates the entire consensus reached on how to describe scenarios at the Advisory Committee meetings over the past four years. It is written as "fact" (with "will" rather than "can" or "could"); as a single scenario (contradicting the figures below it) arguing that "urban water demand will increase." These paragraphs **must** be re-written.

I propose the following replacement for the entire text on the top of pages 4-5. I have tried to keep true to the current text and length:

In the future, water management challenges will grow more complex as demand patterns shift, environmental needs are better understood, and climate changes become more evident. When the State Water Project was authorized in 1960, the state was home to 16 million people. Today, there are more than 36 million Californians and that number is projected to grow to 48 million by 2030.

Many possible futures are possible, depending on the choices we make and the policies we implement, but it is possible to maintain a healthy agricultural sector and growing populations while restoring damaged ecosystems without increases in water demands.

The specific changes that will occur by 2030 are uncertain and will vary widely from region to region, sector to sector. A positive future requires that we work to achieve water management policies that encourage efficient use of water through diversified integrated regional water management supported by strong statewide water systems.

If this replacement text is not adopted, certain inaccuracies must still be fixed in the current text:
Page 4: In the third sentence, replace "that number **will** grow to 48 million…" with "**is projected to** grow to 48 million…" Specific population growth rates are not certain, hence the word "will" is incorrect and misleading. This is a misuse of the Dept. of Finance projection.

Page 4: What "scenario" does the fourth sentence ("Over the next 25 years, while agricultural productivity increases,") describe?? Replace "agricultural water use **will** decline" with "agricultural water use **can** decline…" We don't know if it "will," only that it "can."

Page 5: first and second full sentences. These sentences are grossly inaccurate and **must** be deleted: **"Urban water demand will increase, especially in the southern part of the state where population growth is greatest. The increasingly productive economy is**

using water more efficiently but will still need adequate and reliable supplies of sufficient quality for future growth."

Page 5: Change "These scenarios clearly show that water demands **will** change" to "…**can** change". "Will" implies certainty, but scenarios are possibilities only.

All the scenario descriptions on the bottom of Page 5 are inadequate and misleading. The term "background" water conservation measures" is meaningless or misleading anywhere. If it means conservation measures taken naturally (typically called "natural replacement") then the descriptions are inaccurate, since these scenarios include many utility programs under Urban BMP programs.

Suggested replacement text for the Scenario Descriptions, bottom of page 5:

Scenarios are possible pictures of the future, and depend completely on the assumptions made. The three scenarios described below are not predications; rather they offer three possible paths for future California water needs. None of them include climate change or other effects on water supplies. Details of the assumptions behind these scenarios can be found in Volume 4.

Current Trends: Recent trends continue for population growth and development patterns, agricultural and industrial production, water dedicated for the environment, and modest water-efficiency improvements.

Less Resource Intensive: Higher agricultural and industrial production; more water is dedicated for the environment, and greater efficiency gains are made through state and local efforts. While this scenario shows reduced demand for water, it still does not include all cost-effective conservation options currently available.

More Resource Intensive: More rapid population growth, higher agricultural and industrial production, no additional water for the environment, and fewer water conservation and efficiency improvements than under Current Trends.

Inappropriate Characterization of Initiative 2

Page 16. The write-up of "Initiative 2" is inadequate. This still appears simply to be a rewording of a write-up about water infrastructure and is misleading. "Statewide water management systems" include more than infrastructure. **The write up must make clear that non-structural systems are also included here.** I especially urge that in sentence 2 of Page 16, change to "**These water management systems include physical facilities,**

their operation policies and regulations, and non-structural options implemented statewide." Add a paragraph break at this point.

In the Third paragraph change "Improvements **will** include new water storage…" to "Improvements **may** include new water storage…"

In the Third paragraph change "**These improvements will increase reliability**…" to "**Improvements seek to increase reliability**…"

Delete the fourth paragraph starting "Water conservation…"
Delete the fifth paragraph starting "System improvements…"

Add a new paragraph (page 16-17): **"Non-structural management options also contribute to better operation of water systems. These include water-quality standards, monitoring programs, economic incentives and water pricing policies, and extensive statewide water-efficiency programs such as appliance standards, labeling, and education."**

Page 17, last paragraph. Change "**develop**" to "**enhance**." [E.g., "and enhance fish protection, and **develop** additional water storage" to "and enhance fish protection, and **evaluate** additional water storage."

Page 18. In the "strategies" to improve floodplain management, you must add, "reduce floodplain development." The sentence should read: **"These strategies include: improved maintenance, system rehabilitation, reduced floodplain development, better emergency response, sustainable funding…**."

Misleading or Badly Described Figures

Page 5: The Figure on the far right, labeled "Changes, Including Groundwater Overdraft" is misleading and **should be replaced with a figure that does NOT include groundwater overdraft**. There is no justification for adding 2 MAF to every scenario at the last moment. This was not discussed at any Advisory Committee meeting; there is no justification for a 2 MAF number.[2] Moreover, eliminating GW overdraft may be done in ways completely separate from the calculations done for the scenarios.

[2] This 2 maf estimate is unsupported by analysis, even by DWR. The most recent Bulletin 118-03 on California Groundwater reports that "A comprehensive assessment of overdraft in the State's groundwater basins has not been conducted since Bulletin 118-80, but it is estimated that overdraft is between 1 million and 2 million acre-feet annually." The most recent Bulletin 160 (1998) estimates that groundwater

Moreover, Chapter 4 of Volume 2 on Conjunctive Use states that 2 million acre-feet of additional supply could be developed with 20 million acre-feet of conjunctive use systems, further supporting the argument that GW overdraft should not be integrated into these scenarios.

Page 15: I have previously noted the serious flaws in the Figure that appears on the bottom of Page 15. It mixes different kinds of options; the quality of the numbers ranges from good to terrible. The ranges shown are incorrect and inadequately represented. **There are two choices: fix this figure with a proper caption and labels, or delete it.** A proper caption would note that the numbers are highly uncertain, especially the figures for Agricultural Water Use Efficiency. It would note that the cost of these different options is not indicated. It would eliminate the phrase "additional supply" and note these management choices produce either new supply or reduce demand. It would delete the Y-axis label of "Additional Supply" leaving only the units "Million Acre Feet." The reluctance to fix this figure now forces me to insist that it be deleted:

For example, the agricultural water-efficiency estimate is grossly incomplete. As the March 5th writeup in Volume 2 notes, these estimates **do not include substantial water efficiency approaches**. "Benefits resulting from implementation of other advanced technologies in hardware, water management, and crop evapotranspiration, crop shifts and reducing crop transpiration have not been quantified for this narrative." [Volume 2, page 3-5]. Yet these unquantified savings could be many times larger than the upper limit shown in the Figure.

Another example of the flaws behind this figure: The upper limit of the Urban Water Conservation number is derived from the Pacific Institute's study, but this is **neither an upper limit on conservation potential; nor does it apply to 2030 forecasts** – it is an estimate of currently (year 2000) achievable conservation potential given typical water technology available in 2000. It also represent a "reduction in demand" not an increase in supply. Sometimes these are the same; sometimes they are not. Please differentiate.

Inadequate Attention to the Issue of Climate Change

Page 4: In the first sentence, replace "**and hydrologic patterns become more uncertain**." With "**and climate changes become more evident**." The current phrase

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overdraft in 1995 was 1.5 maf, largely due to overdraft in the central coast, Tulare Lake, and San Joaquin River hydrologic regions and notes that overdraft is expected to decline to 1.1 maf by 2020.

certainly refers to climate change, but there is no reason to hide the issue with code words.

Page 7, first paragraph. We do NOT live in an arid state. Replace "**Because we live in an arid state**" with "**Because competition for California's limited water resources is growing, we must**…"

After "As California's population grows…there is bound to be an effect on California's environment" add the sentence "**And by 2030, the effects of global climate change on the State's water resources will be increasingly evident."**

[Separate Pacific Institute comments will be filed for Volumes 1-4.]

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